

CLAIMS:

1. A power plant comprising:

a nacelle cowl having an inlet end and an exhaust nozzle end;

a primary gas turbine engine mounted within said nacelle cowl;

said primary gas turbine engine having a core compartment; secondary power means for providing pneumatic air to at least one load; and

said secondary power means being positioned within said core compartment.

2. A power plant according to claim 1, further comprising:

an inner core cowl being concentrically mounted within said nacelle cowl about the primary gas turbine engine; and

an annular by-pass passage extending between said nacelle cowl and said inner core cowl.

3. A power plant according to claim 2, further comprising

said secondary power means having inlet means for drawing a fluid from said by-pass passage into said secondary power means.

4. A power plant according to claim 3, wherein said inlet is an axial inlet.

5. A power plant according to claim 3, wherein said inlet means comprises a radial inlet plenum.
6. A power plant according to claim 5, wherein said radial inlet plenum comprises a ring member defining a number of air passages extending radially through the core compartment.
7. A power plant according to claim 3, further comprising said secondary power means having outlet means for directing expanded gases into said by-pass passage.
8. A power plant according to claim 3, further comprising a closure member movable between a first position where fluid from said by-pass passage is drawn into said inlet means and a second position where fluid from said by-pass passage is prevented from being drawn into said inlet means.
9. A power plant according to claim 1, wherein said primary gas turbine engine has a compressor section, a combustion section, and a turbine section.
10. A power plant according to claim 1, wherein said secondary power means comprises an auxiliary power unit for providing

pneumatic air to said at least one load and electrical loads for an aircraft.

11. A power plant according to claim 1, wherein said pneumatic air from said auxiliary power unit is used to start said primary gas turbine engine.

12. A power plant according to claim 1, wherein said secondary power means comprises a gas turbine engine.

13. A power plant according to claim 1, wherein said secondary power means comprises an auxiliary power unit having an environmental control system.

14. A power plant according to claim 1, wherein said secondary power means comprises a power unit which integrates an auxiliary power unit, an energy power unit, an environmental control system, and an engine start system.

15. A power plant according to claim 1, wherein said secondary power means comprises means for heating said primary gas turbine engine.

16. A power plant according to claim 1, further comprising said secondary power means having an inlet for receiving air from said core compartment.

17. A power plant according to claim 1, further comprising a hollow member for allowing ambient air to be drawn into said secondary power means.

18. A power plant according to claim 1, further comprising a hollow member extending from an outlet end of said secondary power means for directing expanded gas to an ambient environment.

19. A power plant comprising:

a nacelle cowl having an inlet end and an outlet end;

a primary gas turbine engine mounted within said nacelle cowl;

said primary gas turbine engine having an aft center-body;

secondary power means for providing pneumatic air to at least one load; and

said secondary power means being positioned within said aft center-body.

20. A power plant according to claim 19, further comprising:

a by-pass passage; and

said secondary power means having inlet means for drawing a fluid flowing through said by-pass passage into said secondary power means.

21. A power plant according to claim 20, further comprising said secondary power means having an outlet for discharging a fluid into an exhaust nozzle.